Claims

1. Injectable bone filler comprising calcium salt particles, an organic binder having an affinity for calcium salt, cells chosen from the group of stem cells, osteogenic cells, and osteoprogenitor cells, and a pharmaceutically acceptable buffer.

2. Bone filler according to claim 1, wherein the particles are of a calcium salt are chosen from the group of calcium phosphates, monetite, brushite, ($CaHPO_4$), calcium pyrophosphate, calcium carbonate, and combinations thereof.

3. Bone filler according to claim 2, wherein the calcium salt is hydroxyapatite, β-calcium phosphate, and combinations thereof.

4. Bone filler according to claim 3, wherein the particles have a diameter in the range of 100 to 600 μm, preferably 200 to 400 μm.

5. Bone filler according to any of the preceding claims, wherein the binder is chosen from the group of alginates, dextrans, cellulose, cellulose derivates, plasma, biogenic binders, hyaluronic acid, and combinations thereof.

6. Bone filler according to claim 5, wherein the binder is chosen from the group of hyaluronic acid, sodium alginate, sodium carboxymethyl cellulose, dextran, fibrin glue, and transglutaminase.

7. Bone filler according to claim 6, wherein the binder is sodium alginate.

8. Bone filler according to any of the preceding claims, wherein the binder is present in an amount of from 0.5 to 10 wt.%, preferably from 3 to 7 wt.%, based on the weight of the bone filler.

9. Bone filler according to any of the preceding claims, wherein the buffer is phosphate buffer saline (PBS).

10. Bone filler according to any of the preceding claims having a solids content of 30-70, preferably 40-60 wt.%.

11. Bone filler according to any of the preceding claims having a viscosity between 30,000 and 100,000 centipoises.

12. Bone filler according to any of the preceding claims further comprising an angiogenic factor.

13. Bone filler according to any of the preceding claims, wherein the cells are present in seeded form onto the calcium salt particles.

14. Bone filler according to any of the preceding claims further comprising an osteoinductive factor.

15. Syringe comprising a needle and a reservoir, which reservoir comprises an injectable bone filler according to any of the preceding claims.

16. Syringe according to claim 15, wherein the needle has a length between 5 and 20 mm, and a diameter between 2 and 5 mm.

17. Method for preparing an injectable bone filler according to any of the claims 1-14, comprising mixing the binder and the buffer to prepare a gel, adding the calcium salt particles to the gel, and homogenizing to obtain the bone filler.

18. Method according to claim 17, in which cells are seeded onto the calcium salt particles before they are added to the gel, or wherein cells are introduced after combining calcium salt particles and the gel, the cells being chosen from the group of stem cells, osteogenic cells, and osteoprogenitor cells.

19. Method for repairing an osseous defect comprising injecting an injectable bone filler according to any of the claims 1-14 into the defect.